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09/560,234	04/28/2000	Nobuyuki Takamori	49799(801)	3999

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EXAMINER

NGUYEN, DZUNG C

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/560,234	Applicant(s) Takamori et al
Examiner Dzung Nguyen	Art Unit 2652

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Apr 28, 2000

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 835 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-17 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892)

18) Interview Summary (PTO-413) Paper No(s). _____

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) Notice of Informal Patent Application (PTO-152)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4, 8, -9

20) Other: _____

DETAILED ACTION

1. Claims 1-17 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al, US patent (5,381,402).

Regarding claim 1, Lee et al teach a disk cartridge [fig 3] comprising: an optical disk [53] for recording/ reproducing information, and a cartridge case [30] rotatably accommodating the optical disk [53] and being provided with a notch [35-36 or 39] on a side face thereof, wherein the notch [35-36 or 39] allows an arm of a disk driving device [fig 11] to approach the optical disk [53] when the disk cartridge is inserted in the disk

driving device for recording/ reproducing information through a head [120, fig 11] supported by the arm [111] (see col. 3 lines 65 to col. 4 line 5 and col. 5 lines 39-67).

Regarding claim 2, Lee et al teach wherein the optical disk [53] has a center-hub at the center [52] thereof, and the cartridge case [30] has a counterbore [58, fig 13] formed in a recess form on an inside wall on a side opposite to a side where a drive shaft [165] for rotating the optical disk [26] is inserted, the counterbore [58] facing the center hub [162] (see figs 2-3 and 13).

Regarding claim 4, Lee teaches a disk cartridge [42, fig 3] comprising: an optical disk [53] for recording/ reproducing information, and a cartridge case [30] rotatably accommodating the optical disk [53], wherein the cartridge case has a recess [51 or 52] or protrusion [35-36 or 39] on an inner wall of the cartridge case [30] facing the optical disk [53] and the optical disk [53] is provided with recess or protrusion [35-36 or 39] corresponding to the recess of the cartridge case [30] so that the degree of freedom in a radial direction of the optical disk [53] is defined by the corresponding recess [51 or 52] and protrusion [35-36 and 39] (see fig 3)..

Regarding claim 5, Lee et al teach wherein either the recess [51 or 52] or protrusion [35-36 or 39] formed on the inner wall of the cartridge case [30] or the optical disk [53] is tapered at its circumference (see fig 3).

Regarding claim 6, wherein the protrusion [45-36 or 39] or recess [51 or 52] of the optical disk [53] is formed in a center hub having a center hole [center hole] to be fitted on a shaft [163, fig 13] for rotating the optical disk [53] (see figs 3 and 13).

4. Claims 7-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Sandell et al, US patent (5,903,542).

Regarding claim 7, Sandell teach a disk cartridge [fig 2] comprising: an optical disk [21] for recording/ reproducing information, and an cartridge case [20] rotatably accommodating the optical disk [21], wherein the cartridge case [20] includes an upper case [40] and a lower case [24] having an upper opening [60] and a lower opening [30] [fig 2], respectively, for allowing the head for recording/ reproducing information to face the optical disk [21] and a shutter [61 and 63, fig 1] for opening and closing the upper and lower openings (see fig 4), the lower case [24] is cut to form the lower opening [30] from a bottom face to a side face (see fig 2), and the shutter [63] shields the upper opening along a plane defined by an upper face of the upper case [40] and shields the lower opening along two planes defined by the bottom face [30] and the side face of the lower case [24].

Regarding claim 8, Sandell teach wherein the shutter [62 and 63] includes an upper shutter portion [80] and a lower shutter portion [61] for shielding the upper and lower openings (see figs 2 and 3), a perpendicular portion [76] jointing the upper and lower shutter portions, a pawl [65] for preventing the shutter from coming off and a guide

portion [66] extending from the perpendicular portion for slidably guiding the shutter [61 and 63], and the upper case [40] is sandwiched between the guide portion [66] and the upper shutter portion [40] (see figs 2-3).

Regarding claim 9, Sandell teach wherein the upper case [40] has a guide groove [45] for slidably guiding the shutter [61 and 62] (see fig 3).

Regarding claim 10, Sandell et al teach wherein the shutter [61 and 63] is provided with a pawl [65] and the cartridge case [30] is provided with a guide groove [45], for allowing sliding movements and preventing the shutter [61 and 63] from coming off at the time of opening and closing the shutter [61 and 62] (see fig 3), in an upper case side [40] of an elongated space formed between the upper [40] and lower cases [20] (see fig 3).

Regarding claim 11, Sandell et al teach wherein the lower case [20] is positioned on a side of a recording face of the optical disk [21], and the shutter [61 and 63] includes an upper shutter portion [80] and a lower shutter portion [61] for shielding the upper and lower openings [60 and 30] of the upper and lower cases [40 and 20], respectively, and a guide portion [45] for guiding the movement of the shutter [61 and 63], so that the upper case [40] is sandwiched between the upper shutter portion [80] and the guide portion [45] (see fig 3).

Regarding claim 12, Sandell et al teach wherein the shutter [61 and 63] includes a pawl [65] for preventing the shutter from coming off and the position of the shutter is

restricted in a direction perpendicular to a moving direction of the shutter by the pawl [65] and a perpendicular portion [76] jointing the upper shutter portion and the lower shutter portion [80 and 61] (see fig 3).

Regarding claim 13, Sandell et al teach a disk cartridge [20, fig 2] comprising: an optical disk [21] for recording information signals; a cartridge case rotatably accommodating the disk [21] and being provided with a first opening and a second opening [60 and 30] on upper and lower face thereof, the openings [60 and 30] allowing approach of recording and reproducing means for recording or reproducing the information signals on or from the disk [21]; and a shutter [61 and 63] for opening and closing the openings [60 and 30], wherein the first opening [60] formed on one of the upper and lower faces of the cartridge case [20] has a first opening region [60] located in the vicinity of the center of the disk [21] and a second opening region [30] extending from the first opening region in a radial direction of the disk to the outside of the disk [21], an edge [32] of the second opening region [30] on a side in a shutter 61 and 63] closing direction in which the shutter [61 and 63] closes is formed toward the shutter closing direction as compared with the first opening region and an edge [32] of the second opening region on a side in a shutter opening direction [open direction] in which the shutter opens is formed toward the shutter closing direction as compared with the first opening region [60], the shutter has a first shutter section [63] for opening and closing the first opening [60, the first shutter section [63] has a first shutter region [73] located in the

vicinity of the center of the disk [21] and a second shutter region [30] extending from the first shutter region [60] in the radial direction of the disk to the outside of the disk [21], an edge of the second shutter region [30] on a side in the shutter closing direction is formed toward the shutter closing direction [close direction] as compared with the first shutter region [63] and an edge [32] of the second shutter region in the shutter opening direction is formed toward the shutter closing direction [close direction] as compared with the first shutter region [63] (see figs 2 and 3) .

Regarding claim 14, Sandell teach wherein the outline of an edge [76] of the first shutter section [80] on the side in the shutter closing direction is substantially the same as the outline of an edge [76] of the first opening [60] on a side in the shutter opening direction, at least in a side where the second shutter region [61] is formed rather than the center of the disk [21] in a direction perpendicular to the direction of the movement of the shutter [61 and 63] (see figs 2-3).

Regarding claim 15, Sandell teach a disk cartridge [20, fig 2] comprising: an optical disk [21] for recording information signals; and a cartridge case [20] rotatably accommodating the disk [21], wherein the cartridge case [20] has an opening [60] on one face thereof, the opening [60] having a first opening region [73] located in the vicinity of the center of the disk [21] and a second opening region [30] extending from the first opening region in a radial direction of the disk [21] to the outside of the disk [21], the disk cartridge [20] has a shutter [61 and 63] for opening and closing the opening, the

shutter having a first shutter region [60] located in the vicinity of the center of the disk [21] and a second shutter region [30] extending from the first shutter region in the radial direction of the disk [21] to the outside of the disk, the second opening region [30] is formed toward a direction in which the shutter closes as compared with the first opening region [60], and the second shutter region [30] is formed toward the direction in which the shutter closes as compared with the first shutter region [61] (see figs 2-3).

Regarding claim 16, Sandell teach wherein the first opening region [30] is an opening which allows a spindle motor [86, fig 17] to approach the disk and the second opening region is an opening [60] which allows a pickup to approach the disk [21] (see figs 2-3 and 17).

Regarding claim 17, Sandell teach a disk cartridge comprising: an optical disk [21] for recording information signals; and a cartridge case [20] rotatably accommodating the disk [21], wherein the cartridge case [20] has on one face thereof, a third opening [60] which is located in the vicinity of the center [21] of the disk and allows a spindle motor [86, fig 17] to approach the disk [21] and a fourth opening [30] which is formed separately from the third opening [60], extending in a radial direction of the disk to the outside of the disk [21], and allows a pickup [head] to approach the disk [21], the disk cartridge [20] has a shutter [61 and 63] having a first shutter region [63] for opening and closing the third opening [60] and a second shutter region [61] for opening and closing the fourth opening [30], the first shutter region and the second shutter region [60 and 30]

being formed in one piece [fig 25], the fourth opening is formed toward a direction in which the shutter [61 and 63] closes as compared with the third opening [60], and the second shutter region [30] is formed toward the direction in which the shutter closes as compared with the first shutter region [60].(see figs 2-3 and 25).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al, US patent (5,381,402) (as applied to the rejections in paragraph 3 above).

Regarding claim 3, Lee et al do not teach wherein the cartridge case has a thickness less than 5 mm and an area smaller than 65 mm square. However, It would have been obvious to one of ordinary skill in the disc drive art at the time the invention was made to form the cartridge case has a thickness less than 5 mm and an area smaller than

65 mm square as claimed through routine lab experimentation and optimization because the smaller range of thickness will save the cost and reduce the size of the cartridge case.

Lee et al do not teach in detail that the optical disk has a diameter less than 64 mm and a thickness less than 0.8 mm and forms a track having a pitch less than 0.6 μ m so that the optical disk allows information of 650 MB or more to be recorded thereon.

“Official Notice” is taken of the fact that the standard optical disk has a diameter less than 64 mm and a thickness less than 0.8 mm and forms a track having a pitch less than 0.6 μ m so that the optical disk allows information of 650 MB or more to be recorded thereon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the optical disk of Lee as a standard optical disk because it would allow the cartridge case of Lee et al to be used the standard optical disk available on the market.

The prior art made of record and not relied upon

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Takahashi, US. Patent (5,323,382).
- b. Koshiyouji, US patent (5,777,982).
- c. Kosaka, US patent (5,570,342).
- d. Usami et al ,US patent (5,894,469).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Nguyen whose telephone number is (703) 305-9695. The examiner can normally be reached on Monday-Friday from 8:30 am to 6:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900 and fax number is (703) 872-9314.

Dzung Nguyen

2/24/02

Allen Cao
ALLEN CAO
PRIMARY EXAMINER